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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,756

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EXAMINER

WEINSTEIN, LEONARD J

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

12/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/573,756

Applicant(s)

UEHARA ET AL.

Examiner

Leonard J. Weinstein

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,7,12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7,12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the amendment of October 01, 2007. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.
2. The examiner acknowledges claims 1 and 7 have been amended, claims 2, 5-6, and 9-11 have been canceled, and claims 12 and 13 have been added.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Iverson 6,006,785. Iverson teaches all the limitations as claimed for a compressor including: (claim 1) a cylinder block 1 which has a cylinder bore 2 to accommodate a piston 28, a crank chamber, not shown but known in the art be a common component of an axial piston compressor as disclosed (col. 1 ll. 5-14), which is provided at one end of the cylinder block 1, a suction chamber and a discharge chamber, neither shown but each known in the art be a common component of an axial piston compressor, that are provided at the other end of the cylinder block 1, a valve, as defined by elements 5, 6, 7, 10, 13, and 15, that is provided between the cylinder bore 1 and the suction chamber, as defined by a chamber that would be in communication with suction hole element 8 as is known in the art to be common to an axial piston compressor but not shown, and between the cylinder bore 1 and the discharge chamber, as defined by a

chamber that would be in communication with a discharge hole element 9 as is known in the art to be common to an axial piston compressor but not shown, a valve plate 7 provided with the valve, elements 5, 6, 7, 10, 13, and 15, and having a suction hole 8 to communicate between the cylinder bore 1 and the suction chamber (not shown) and a discharge hole 9 to communicate between the cylinder bore 1 and the discharge chamber (not shown), a suction valve 15 provided with the valve, elements 5, 6, 7, 10, 13, and 15, and assembled to the side of the cylinder bore 1 of the valve plate 7, and the suction valve 15 is comprised of a flexible plate 18 to be able to open and close the suction hole 8, a drive shaft, not shown but known in the art to a component of an axial piston compressor as disclosed, that is rotatably and axially supported within the crank chamber (not shown) to reciprocally actuate the piston 28 (col. 3 ll. 55-57), and a valve structure, as shown in figure 1 and defined by elements 16, 17, 18, and 19, in which the suction valve 15 is formed with a suction valve main body 18, and an opposing part 17 that is integrally formed on the suction valve main body 18, and faces the suction hole 8 and a valve seat, as defined by elements 5 and 6, at the opening edge of the suction hole 8 so as to be able to open and close the suction hole 8, and clearance forming means (col. 3 ll. 19-24), comprising a coating layer 10 having a predetermined thickness coated on at least one of the valve plate main body 7, as defined by portion of element 10 surrounding elements 12 and 13 which covers element 7 on an underside and creates a clearance between a suction valve 15 and a cylinder block element 1 as shown in figure 7, excluding the valve seat, elements 5 and 6, at the opening edge of the suction hole 8 and the suction valve main body 18; (claim 7) and an upper surface of the valve seat, elements 5 and 6, is chamfered or rounded, as defined by sloping ramp element 6 and elements 20, 21, and 22 (col. ll. 34-37).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurihara et al. in view of Iverson. Kurihara teaches all the limitations as claimed for a compressor including: (claim 1) a cylinder block (fig. 1), a crank chamber, defined by elements 30 and 27 as shown in figure 1, a cylinder bore 71 to accommodate a piston 46, a suction chamber 72, a discharge chamber 70, a valve 22 provided between a cylinder bore 71 and a suction chamber 72 and a discharge chamber 70, a valve plate 21 provided with the valve 22 (suction valve) and having a suction hole 25 to communicate between the cylinder bore 71 and the suction chamber 72 and a discharge hole 24 to communicate between the cylinder bore 71 and the discharge chamber 70, a suction valve 22 provided with the valve and assembled to the side of the cylinder bore 71 of the valve plate 21, and the suction valve 22 is comprised of a flexible plate as

shown in figure 27, to be able to open and close the suction hole 25; and a drive shaft 34 axially and rotatably supported in a crank chamber to reciprocate a piston 46 as shown in figure 1; (claim 12) and a valve plate 21 including a plurality of suction holes 25 as shown in figure 26 with reference to the embodiment of figure 27, equally spaced on an outer periphery of a valve plate 21 but fails to teach the valve structure. Kurihara fails to teach the following limitation that is taught by Iverson for a compressor having a valve structure, as shown in figure 1 and defined by elements 16, 17, 18, and 19, in which the suction valve 15 is formed with a suction valve main body 18, and an opposing part 17 that is integrally formed on the suction valve main body 18, and faces the suction hole 8 and a valve seat, as defined by elements 5 and 6, at the opening edge of the suction hole 8 so as to be able to open and close the suction hole 8, and clearance forming means (col. 3 ll. 19-24), comprising a coating layer 10 having a predetermined thickness coated on at least one of the valve plate main body 7, as defined by portion of element 10 surrounding elements 12 and 13 which covers element 7 on an underside and creates a clearance between a suction valve 15 and a cylinder block element 1 as shown in figure 7, excluding the valve seat, elements 5 and 6, at the opening edge of the suction hole 8 and the suction valve main body 18. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a suction valve main body and hole to be provide a clearance between a valve main body and a valve plate or a cylinder block, in order to provide a valve structure that would facilitate a flow of gas refrigerant into a compression chamber directed toward the middle of a cylinder wherein a piston reciprocates to decrease the heating of a gas increase a degree of fill (Iverson – col. 1 ll. 60-67).

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iverson US 6,006,785. Iverson discloses the claimed invention except for a coating layer comprised of fluorine. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a coating layer comprised of fluorine in order to create a clearance for a suction valve between a valve main body and a valve plate or cylinder block. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 2, and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. Weinstein whose telephone number is (571) 272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Karmer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LJW

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Devon Karmer
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